

# Alcimed

Press release

## Satellites and New Space, a revolution in the aerospace market

***Alcimed, a consulting company specializing in innovation and the development of new markets, examines the arrival of new players and new services that have disrupted the space sector in the past few years. This trend, termed "New Space", is breaking the traditional framework of satellite launch and operation.***

*Toulouse, May 17, 2017 – The space market is changing rapidly and traditional players are facing growing needs, profitability issues and the threat of new entrants.*

There are currently two categories of satellites in the space sector: traditional or very high added value satellites (used mainly in telecommunication) and micro-satellites or "microsats", which have emerged thanks to the miniaturization of components (in full development with the arrival of installations to provide high speed internet).

### **Reusing the launcher, a new way to optimize costs**

For all satellites, the launch represents a significant burden that can amount to nearly a third of the total cost, as in the case of using the Ariane5 satellite for example. Thus, reducing launch costs appears to be a major competitive lever, especially for microsats, whose model is close to that of the "disposable satellite".

SpaceX has positioned itself as a pioneer in reusable (or "re-use") by recovering the first stage of its Falcon 9 in 2016 with the objective of reducing the traditional launch costs by 30%. However, due to the engine damage sustained during the first flight, proof of the economic competitiveness of the rocket's take-off remains to be seen.

*"The reuse of launchers is mainly aimed at traditional satellites with high added value. For microsats, the problem is somewhat different because the components are not destined to last and the challenge will be to find solutions to launch more satellites on a more regular basis."* explains Christelle Marestang, Project Manager at ALCIMED in Toulouse.

### **The explosion of the microsatellite market, an opportunity for new players in the launcher field**

Microsats represent a tremendous technological opportunity for operators embarking on the quest for broadband connectivity, particularly for airlines facing increasing customer demand. Some players expect the on-board connectivity segment to grow by 15% per year<sup>1</sup>.

To establish a position on this market requiring immediate services (online games for example), the key is to use several small satellites placed in low orbit. Thanks to the reduction of latency time, these new systems make it possible to achieve performance close to that of fiber optic cables while remaining competitive from an economic point of view.

With the explosion in the number of these small low-cost satellites expected in the coming years (see box), needs are evolving, not only in terms of cost reduction, but also in terms of an increase in the rate of launches.

**Mini satellites, mini launchers.** Some have understood the situation well and have chosen to tackle this new market, to the detriment of traditional players, with some planning launches as early as 2018. The market is changing rapidly and among these new players, inspired by the success of SpaceX, are

#### **The booming mini satellite market**

By 2022, more than 400 launches of nanosats (<10kg) and microsats (<100-150kg) are expected each year according to SpaceWorks Enterprises.

This fast-growing market should reach a value of \$22 billion in 2025, including \$5.3 billion for launch services only.

<sup>1</sup> Notably Thales for the 75 equipped companies: [www.lefigaro.fr](http://www.lefigaro.fr), *Bientôt de l'internet haut débit dans les avions*

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Vector Space, Rocket Lab, Firefly and projects involving launches from aircraft such as Vulcan Aerospace or Virgin Galactic.

## *Going further by maximizing the operational life span of satellites*

A key success factor for satellite incumbents in a much more challenging environment is competitiveness. Inspired by SpaceX, which introduced the possibility of reducing overall costs by reusing the most expensive equipment, there is a trend towards maximum profitability of the equipment. After launchers, it is now the satellites themselves that enter the reuse area: **tomorrow, in-orbit services to extend life for satellite operators will be offered thanks to "support" satellites.** We consider that the maximum lifetime of a satellite varies from 5 to 15 years depending on the type of functions performed (telecommunication, observation, etc.). However, maintaining the satellite in operation may be limited by the amount of fuel available. Whether through maintenance or fuel addition, the priority remains to maximize the operating life and therefore the revenues generated by the satellite.



*Figure - Source: DARPA Robotic Servicing Program of Geosynchronous Satellites in partnership with SSL*

On the European side, Airbus Defence and Space has already positioned itself on these "space tugs", as have Orbital ATK and Space Systems Loral (in partnership with DARPA) in the United States. A strategic agreement between Intelsat and Orbital ATK<sup>2</sup> has been signed for the provision of its new life extension service announced for 2018.

The space sector is currently undergoing a major transformation with the arrival of new players and new concepts. Generalizing the extension of life to all satellites could contribute to solving another major problem: limiting the amount of space debris (in 2017, nearly 100,000 1cm to 1m in diameter debris are gravitating around the Earth<sup>3</sup>).

## **ABOUT ALCIMED – [www.alcimed.com](http://www.alcimed.com)**

Founded in 1993, ALCIMED is an innovation and new business consulting firm specialized in life sciences (healthcare, biotech, agri-food), chemicals, energy as well as in aeronautics, space, defense and public policy. Today ALCIMED works with major industrial groups, ETIs and SMEs, investment funds and institutional players. ALCIMED relies on a team of 180 highly-skilled individuals to help its clients in the exploration and development of their uncharted territories: New Technologies, Market Innovation, High-Growth Geographies, and Strategic Foresight. ALCIMED is headquartered in Paris and has offices in Lyon and Toulouse in France, as well as in Germany, Belgium, Switzerland, the United-States and Singapore.

Alcimed is a member of CroissancePlus and the ACI (Association des Conseils en Innovation).

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<sup>2</sup> <http://www.intelsat.com/news/press-release> Pioneers in space Orbital ATK announces Intelsat as anchor customer for new satellite life extension service

<sup>3</sup> Les déchets sont aussi un problème dans l'espace, Sciences et Avenir Avril 2017